

DERWENT-ACC-NO: 1985-263991

DERWENT-WEEK: 198543

COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Separation of epitaxial layer of gallium (aluminium)
nitride layers - from sapphire substrate used for
deposition

PATENT-ASSIGNEE: AKAD WISSENSCHAFTEN DDR[DEAK]

PRIORITY-DATA: 1983DD-0256098 (October 28, 1983) , 1983DD-0560980 (October 28,
1983)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DD 224341 A	July 3, 1985	N/A	005	N/A

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
DD 224341A	N/A	1983DD-0560980	October 28, 1983

INT-CL (IPC): C30B025/02, H01L021/20

ABSTRACTED-PUB-NO: DD 224341A

BASIC-ABSTRACT:

A 1 nm thick layer of BN is deposited on the sapphire substrate by gas-phase epitaxy using a NH₃-BCl₃ mixt. The epitaxial layer of GaN or Ga_xAl_{1-x}N is deposited subsequently. During cooling down the epitaxial layer separates from the substrate.

USE/ADVANTAGE - The method is used for the prodn. of layers of the epitaxial material which can be studied without a carrier present. It provides layers free from stress due to mismatch of the thermal expansion-coeff. The sapphire substrate can be reused.

In an example, a sapphire substrate is heated to 1050 deg.C and a mixture of BCl₃ and an excess of NH₃ is admitted with a N₂ carrier gas during 10 seconds. Then the required epitaxial layer is deposited in a conventional way. When the required thickness has been achieved the supply of reagent gases is stopped and the heating switched off.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: SEPARATE EPITAXIAL LAYER GALLIUM ALUMINIUM NITRIDE LAYER SAPPHIRE
SUBSTRATE DEPOSIT

ADDL-INDEXING-TERMS:

ALUMINIUM

DERWENT-CLASS: L03 U11

CPI-CODES: L02-G; L02-J02C; L03-D04; L03-H04E5;

EPI-CODES: U11-C01; U11-C01A;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1713S; 1893P ; 1911S

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1985-114232

Non-CPI Secondary Accession Numbers: N1985-197083